

A NEW SPECIES OF *HAWORTHIA* (LILIACEAE)

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ABSTRACT

A new species of *Haworthia* is described from the Robertson Karoo. This species, *H. pubescens* Bayer, is found in a restricted area south of Worcester, and its relation to other species in the area is discussed.

UITTREKSEL

'N NUWE SOORT *HAWORTHIA* (LILIACEAE).

'n Nuwe soort *Haworthia* vanaf die Robertson Karoo word beskryf. Hierdie soort, *H. pubescens* Bayer, word in 'n beperkte area suid van Worcester gevind, en die verwantskap met ander soorte in die area word hier bespreek.

INTRODUCTION

Von Poellnitz described several varieties of *Haworthia schuldtiana* V. Poelln., mostly from the Robertson Karoo. During investigation into field populations it was found that the described species and varieties bear little relation to the situation in the field. It seems certain that there are several discrete population groups as well as anomalies, and that these should be recognised as such. The object of this paper is to describe a hitherto unnamed element in this complex and discuss its affinities with other species in the area.

INVESTIGATION

From a fairly intensive coverage of the Robertson Karoo it is clear that the small, dark-green, rough-surfaced *Haworthia* associated with *H. schuldtiana* V. Poelln. are common south and east of Langvlei between Robertson and Worcester. The type of the species is recorded from McGregor, and this characteristic form is found at several localities near there, as well as westward to Trappieskraalkloof south-east of Worcester, and eastward to the Stormsvlei Pass.

H. maraisii V. Poelln. at Stormsvlei may perhaps best be recognized as an element (subspecies?) in this complex. At Robertson, and specifically Muiskraalkop (the type locality for *H. schuldtiana* var. *robertsonensis* V. Poelln. fide G. J. Payne), there is an assemblage of forms which may best be regarded as anomalous. From here one moves eastward into the *H. guttata* Uitew. complex near Bonnievale, north-westward to a complex at the farm Dublin, including

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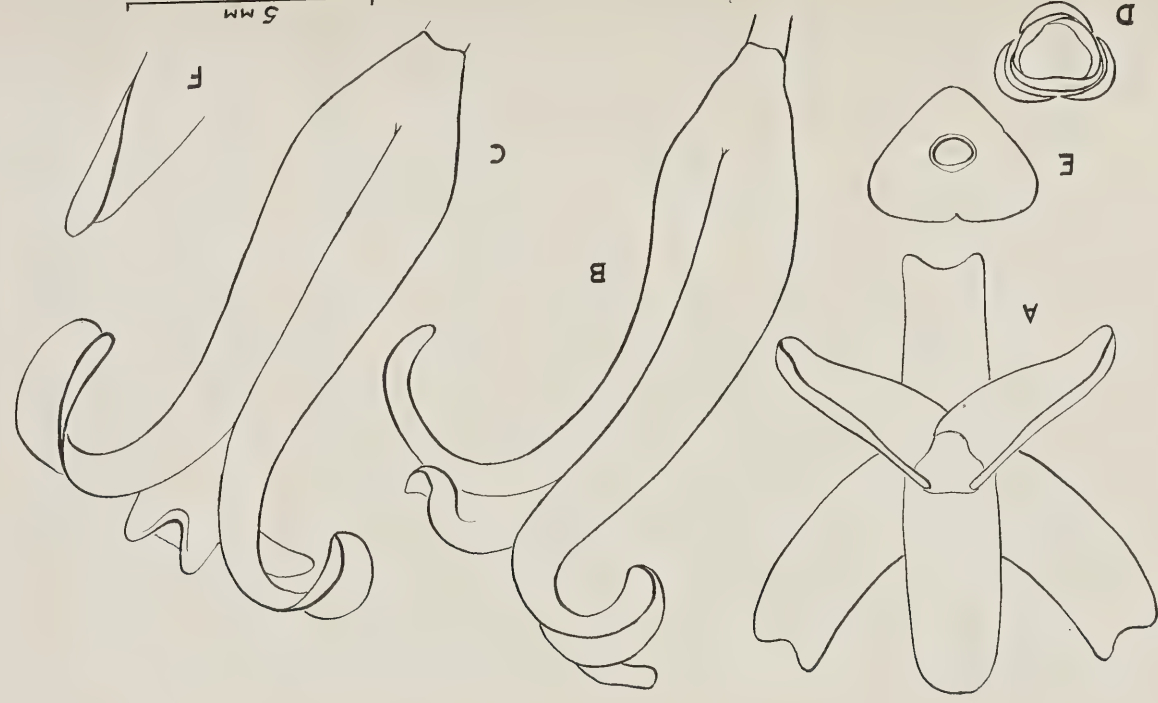
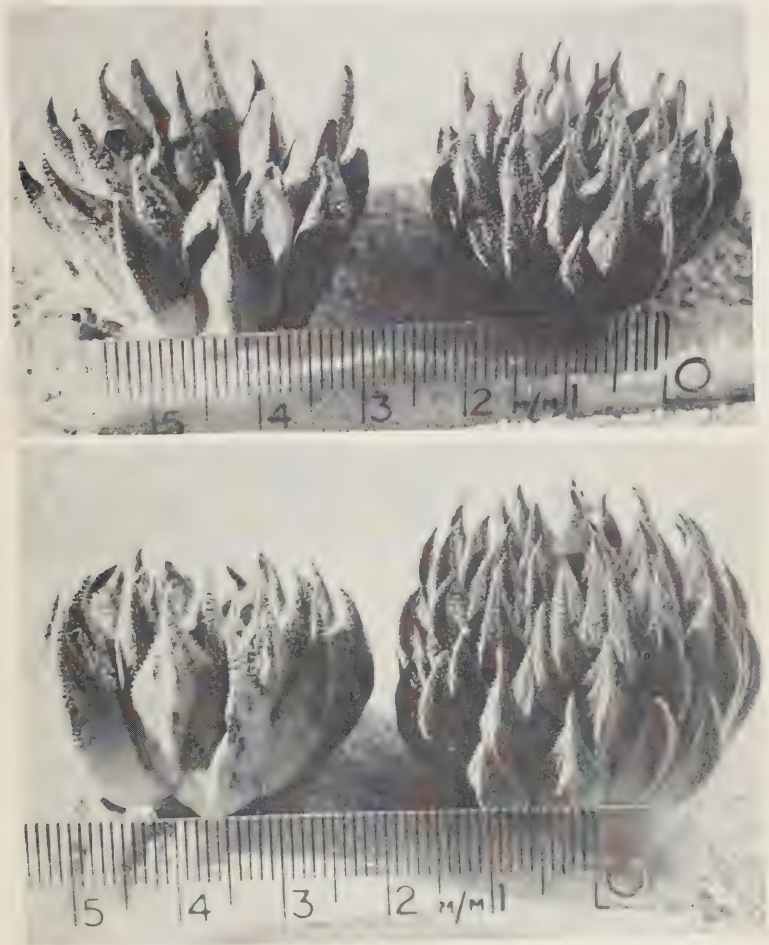


FIG. 1.

H. pubescens Bayer sp. nov. Diagram of flower—(a) flower face, (b) profile, (c) top view, (d) cross section, (e) view of perigon, (f) upper-outer segment incurved as in *H. schuldiana* V. Poelln.

anomalies, and then also eastward to populations at Ashton, Cogmansklouf, Montagu and Barrydale. The locality, appearance of the plants and known variation within the Robertson Karoo, suggest that *H. schuldtiana* var. *major* Smith is not intimately involved here and should be accorded species status. Similarly *H. schuldtiana* var. *simplicior* V. Poelln. at Malgas (correctly Napky,



FIGS. 2 and 3.

H. pubescens Bayer sp. nov. KG 112/70, south of Worcester.

south-west of Swellendam) is apparently also disjunct and has associated elements which extend westward to Bredasdorp. Several of Von Poellnitz' varieties cannot yet be located in terms of field populations (including *H. triebneriana* V. Poelln. var. *nitida* V. Poelln.) and it is not certain whether or not they are merely variants within populations from which elements may already have been named, e.g. *H. schuldtiana* var. *minor* V. Poelln. from McGregor is a normal variant of the species. It should be noted though, that *H. schuldtiana* var. *maculata* V. Poelln. has since been accorded species status (Bayer, ms.) and not in direct association with *H. schuldtiana*. The involvement of *H. guttata* and *H. notabilis* V. Poelln. cannot yet be rationally discussed and it is also not certain where *H. sublimpidula* V. Poelln. has its affinities.

The small dark *Haworthia* first recorded by Mr. F. J. Stayner south-east of Worcester, was initially thought to be a variant of *H. schuldtiana*. However, this population is clearly discrete from those typical of the species and the other known variants and is here named *H. pubescens* Bayer spec. nov. There are two populations at Oliva, Robertson, which may prove to be identifiable with this new species, perhaps forming a tenuous association with the anomalous population at Muiskraalkop. Other factors which lend credence to the species status of Mr. Stayner's plants are firstly the flowering time which is late November-December, unlike *H. schuldtiana* and its nearer associates (including *H. notabilis* and *H. guttata*) which flower March-April; and secondly flower structure. Although floral morphology and its variation is not yet well understood in *Haworthia*, it is clear that *H. pubescens* shows several characters



FIG. 4.

H. schuldtiana V. Poelln. KG 212/70, McGregor.

separating it from *H. schuldtiana*. The flower bud in *H. pubescens* is rather narrowly elongate and regularly biarcuate (albeit only partially) whereas in *H. schuldtiana* the bud is abbreviated and only the extreme tip is upcurved. The dorso-ventral flattening and distinct bifidity of the bud-tip in *H. pubescens* results in a flared arrangement of the segments as is found in *H. herbacea* (Mill.) Stearn, *H. reticulata* (Haw.) Duval and *H. maculata* (V. Poelln.) Bayer (ms.). The incurvature of the upper margin of the inner lower segments is comparable with that in the latter species. Another notable feature is that the upper, outer lobes are widely open, whereas in *H. notabilis*, *H. guttata* and *H. schuldtiana* the outer terminal margins of these segments are inclined forward and inward. This character is also observed in the eastern forms of *H. reticulata* at Bonnievale. The accompanying illustration shows this difference, but too much attention should not be paid to points in the diagram such as degree of recurvature of the segments, shape of the perigon and shape of the flower base. It has been repeatedly observed that these can be highly variable within quite wide limits. Age of the flower alone also effects the facies of the flower as it does also the dimensions of the pedicel, ovary, style and stamens.

Vegetatively, *H. pubescens* has the leaf shape and arrangement of the *H. herbacea* segregates, while the colour and nature of the leaf excrescences are more like these in *H. schuldtiana* and *H. guttata*. *H. pubescens* is found growing very near to *H. herbacea* but no hybrids have been seen. The locality is on a sandstone ridge, rather unique in the area from both geological and botanical viewpoints.

It is concluded that *H. pubescens* is a valid new species with probable affinities in both the *H. schuldtiana* and *H. herbacea* complexes, and is described as follows:—

***Haworthia pubescens* M. B. Bayer sp. nov. (Liliaceae—Aloineae).**

Foliorum rosula acaulescens, 2,5—4 cm in diam., circa 50 folia. *Caulis* crassus, carne albis, $\frac{1}{2}$ diam. rosulae. *Radices* crassae, firmae, albae, carnosae, non-fibrosae. *Folia* erecta, expansa, apices versus incurvati, usque 30 mm longa, 8 mm lata, 4 mm crassa, ovata lanceolata acuminata, aristata cum seta usque 2 mm longa, atroviridia incana, plana lineis indistinctae; *supra* plana ad concava ad bases, convexa turgida versus apices, leviter ad modice muricata, tuberculia saepe setifera; *subtus* convexa, carinata ab prope bases, plerumque altera carinata contiguus vel ab proper margines, modice ad densa muricata, tuberculia plerumque setifera, spinae carinales non seriatiae; *margines* subacutae, spiniferae; *spinae* albae, usque 0,5 mm longae, 0,2—0,3 mm distans.

Pedunculus simplex, 1 mm diam., 10—15 mm longus, racemo incluso, subroseus-fuscus; *racemus* 5—8 mm longus, flores 8—12, 1—2 apertus; *pedicelli* 1—3 mm longi, <1 mm diam.; *bracteae* steriles 8—15, 4—7 longae; *bracteae* fertiles 5—7,5 mm longae. *Perianthium* album, rotundata triangularis ad basis, 13—14

mm longum; *segmentia* regularia stellata patentia, supera externa leviter plicata, inferna interiora margines superae incurvae ad apices; *gemmae* leviter biarcuatae, angustatae elongatae, bifidae ad apices. *Florescentia* sero Nov.–Dec.

Rosette acaulescent, 2,5–4 mm diam., upto 50 leaves. *Stem* thick, white-fleshed, $\frac{1}{2}$ diam. of rosette, seldom elongate, seldom proliferous. *Roots* thick, firm, white-fleshed, non-fibrous. *Leaves* erect, spreading, incurved at tips, firm, upto 30 mm long, 8 mm broad, 4 mm thick, ovate-lanceolate acuminate, aristate with setiferous bristle upto 2 mm long, very dark-green with frosted appearance, longitudinal lines sometimes distinct; *face* flat to concave at base, convex turgid toward middle and tip; slightly to moderately muricate, excrescences frequently spined; *back* convex, keeled from near base, moderately to densely muricate, excrescences frequently spined, frequently with a second keel near middle or toward margins, spines on keel not in clearly defined rows; *margins* sub-acute, spined; *spines* white, upto 0,5 mm long, 0,2–0,3 mm apart. *Peduncle* simple 1 mm diam., 10–15 mm long including raceme, pinkish-brown; *raceme* 5–8 mm long, 8–10 flowers with 1–2 open; *pedicels* 1–3 mm long, 1 mm diam.; *sterile bracts* 8–15, 4–7 mm long; *fertile bracts* 5–7,5 mm long. *Perianth* white, rounded triangular at base, 13–14 mm long; *segments* regular stellate, outer segments slightly plicate at tips, inner lower segments with upper margins incurved to tips, nerves pinkish-brown; *buds* partly biarcuate, narrowly elongate, bifid at tips. *Flowering* late Nov.–Dec.

Type: Sandberg hills, 12 km S.S.E. of Worcester, Bayer KG 112/70 holotype NBG.

H. pubescens resembles *H. schuldtiana* in size, colour and nature of surface excrescences but is more densely muricate and pubescent. It is nearer to *H. herbacea*, *H. reticulata* and *H. maculata* as regards leaf shape and arrangement, and also in floral structure and flowering time. The biarcuate bud and associated flare of the tips of the upper outer perianth segments appears most markedly in these species in the Robertson Karoo, and also in the *H. mirabilis* (including the *H. triebneriana* V. Poelln. varieties) complex of the South-Western Districts.